

## MEAN LAKE LEVELS DURING NOVEMBER, 1928

By UNITED STATES LAKE SURVEY

[Detroit, Mich., December 3, 1928]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes <sup>1</sup>			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during November, 1928:				
Above mean sea level at New York.....	Feet 603.39	Feet 580.61	Feet 571.73	Feet 245.67
Above or below—				
Mean stage of October, 1928.....	-0.16	+0.16	-0.13	-0.09
Mean stage of November, 1927.....	+0.87	+1.71	+0.64	+0.82
Average stage for November, last 10 years.....	+1.32	+1.25	+0.28	+0.57
Highest recorded November stage.....	-0.12	-2.31	-1.94	-2.15
Lowest recorded November stage.....	+2.33	+2.93	+1.28	+2.26
Average departure (since 1860) of the November level from the October level.....	-0.16	-0.26	-0.26	-0.23

<sup>1</sup> Lake St. Clair's level: In November, 1928, 574.98 feet.

## EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, NOVEMBER, 1928

By J. B. KINCER

*General summary.*—During the first decade generous rains in the Southwestern States materially improved the condition of the soil in that area and benefited ranges and pastures, as well as truck crops in the more southern districts. Additional moisture in the central Rocky Mountain area was also helpful, but the cold wave that overspread the Great Plains States was detrimental to outside operations, while there was some damage to down corn by mud and heavy snow in parts of the upper Mississippi Valley. Light to heavy frost extended southward to the northern parts of the east Gulf States, while in the Middle West a hard freeze overspread northwestern Texas; very little harm was done.

Heavy to excessive rains in parts of the interior valleys and the southern Plains States during the second decade were generally unfavorable for agricultural interests, especially for gathering corn, with local damage from floods, the latter principally in eastern Kansas. Elsewhere the period was generally favorable for outdoor operations, especially over the eastern third of the country. In the Western States the abrupt change to colder was rather hard on livestock, but the storms were not severe, as a rule, and no materially damaging low temperatures occurred.

During the last decade the unseasonably cold weather in the more Southeastern States, which brought freezing temperatures to the Gulf coast and heavy frost well southward over the Florida peninsula, resulted in damage to tender vegetation—such as beans, peppers, and eggplants—southward to the Okeechobee district in Florida, while some tender truck crops were nipped farther north; little harm resulted to the hardier varieties. Except in the Northeast, the weather was generally favorable for outdoor operations and seasonal farm work made good advance. Moisture was needed in the South Atlantic and east Gulf sections, but otherwise the soil was well supplied. There was but little snow cover at the close of the month, while the mild weather in the western mountain districts resulted in considerable melting of the previous deposit.

*Small grains.*—During the first decade growth of winter wheat was materially retarded by cold weather over much of the principal producing area, but moisture was mostly abundant and conditions continued satisfactory. Showers were helpful in the Ohio Valley and additional rain or snow in the Southwest favored fall-sown grains, but in the far Northwest moisture was still insufficient. During the second decade precipitation in the Pacific Coast States and Rocky Mountain districts was favorable for winter wheat, while further showers were helpful in parts of the East, although all fall grains needed moisture in the Southeast. There was some local damage by flooding in the lower Missouri and upper Mississippi Valleys, but conditions continued mostly favorable in the main winter wheat belt. During the last decade cool weather retarded growth of winter wheat in the eastern part of the belt, but elsewhere satisfactory advance continued, with the soil in excellent shape generally. Conditions were less favorable in the Pacific Northwest, where moisture was needed, and it was rather dry for winter grains in the Southeast and some adjoining sections.

*Corn.*—During the first decade corn husking made good advance in the Ohio Valley, except for some interruption by rains, while in Iowa heavy rains or snows on the first of the month stopped work, with some damage to down corn from snow and mud. Husking was retarded also in the Great Plains, but elsewhere this work made good advance. During the second decade frequent rains caused interruption to housing, especially in the Mississippi Valley and southern Great Plains; there was some damage by flooding, while high winds blew down more corn in Iowa and leveled shocks in the western Lake region. In the northern Great Plains, the upper Ohio Valley, and generally in the Atlantic Coast States, conditions were mostly favorable and husking made good advance. During the last decade much better weather for gathering corn prevailed and in Iowa conditions were very favorable for husking, though soft fields caused some delay. Housing the corn crop was well along, or about completed, at the close of the month, except in parts of the Mississippi Valley.

*Cotton.*—During the first decade the weather was mostly favorable for outside operations in the eastern part of the belt, and picking the remaining crop made satisfactory advance in most sections. There was some delay by rain in Arkansas, and in Oklahoma conditions were unfavorable for picking, while in northwestern Texas growth was stopped by killing frost. During the second decade scrapping made good advance east of the Mississippi River, but over the northwestern portion conditions were decidedly unfavorable. In Arkansas frequent rains delayed harvest and little progress was made in northern Texas, while in Oklahoma staple was damaged by heavy rains, with picking suspended. During the last decade picking the remaining crop made rather slow advance in the more western and northwestern portions of the belt, because of cool weather and wet fields. In Arkansas conditions were favorable and picking made good progress, with considerable still to gather in some sections; east of the Mississippi River harvest has been nearly completed.

*Miscellaneous crops.*—Pastures were in fair to good condition, for the season, in most sections east of the Mississippi River and ranges were still affording some feed in the northern Great Plains during the month. The range continued partly open in the northern Rocky

Mountain area, but in the Great Basin the dry autumn was unfavorable for feed, and precipitation was generally needed. Livestock continued in satisfactory condition throughout the month, except for some suffering from cold locally.

Winter truck progressed well until the last decade when there was some injury by frost, especially in Florida;

some frost damage was reported in California. There was some injury by frost to cane buds and eyes in Louisiana during the last decade, but seed cane was mostly saved, while excellent harvest weather prevailed generally. Citrus were beginning to need rain at the close of the month in Florida; elsewhere conditions were satisfactory generally.

## WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

### NORTH ATLANTIC OCEAN

By F. A. YOUNG

November was another stormy month over the North Atlantic, and the number of days with gales was equal to or above the normal over the greater part of the steamer lanes and also over the region west of the sixtieth meridian, north of the Bermudas.

The outstanding feature of the weather of the month was the series of exceptionally severe storms that ravaged the coast of Europe, and was, according to press reports, responsible for large loss of life and great damage to property.

Due to the great interest shown in the flight of the German airship *Graf Zeppelin*, Charts VIII to XI were drawn to cover the period from October 29 to November 1, the ship leaving the United States on the former date on her return trip to Germany. The weather conditions during the voyage from Germany were shown on the October Charts VIII to XII, covering the 11th to 15th.

The number of days with fog was somewhat below normal over the Grand Banks and off the European coast and about normal off the American coast and over the eastern section of the steamer lanes.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian), North Atlantic Ocean, November, 1928

Stations	Average pressure	Departure <sup>1</sup>	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julienehaab, Greenland.....	29.51	(?)	29.92	26th.....	28.18	21st.
Belle Isle, Newfoundland.....	29.64	-0.24	30.18	12th <sup>2</sup> .....	28.26	8th.
Halifax, Nova Scotia.....	29.91	-0.09	30.34	2d.....	29.36	7th. <sup>3</sup>
Nantucket.....	29.99	-0.10	30.40	1st.....	29.62	23d.
Hatteras.....	30.13	+0.01	30.56	15th.....	29.72	8th.
Key West.....	30.08	+0.05	30.28	23d.....	29.84	4th.
New Orleans.....	30.20	+0.09	30.52	26th.....	29.90	7th.
Cape Gracias, Nicaragua.....	29.89	-0.01	29.96	23d <sup>4</sup> .....	29.82	4th.
Turks Island.....	30.04	+0.03	30.16	28th.....	29.88	17th.
Bermuda.....	30.20	+0.12	30.54	15th.....	29.88	11th.
Horta, Azores.....	30.24	+0.14	30.64	24th.....	29.72	18th.
Lerwick, Shetland Islands.....	29.52	-0.18	30.26	1st.....	28.57	16th.
Valencia, Ireland.....	29.79	-0.10	30.52	30th.....	28.96	16th.
London.....	29.78	-0.16	30.33	29th.....	28.93	16th.

<sup>1</sup> From normals shown on Hydrographic Office Pilot Chart, based on observations at Greenwich mean noon, or at 7 a. m., seventy-fifth meridian time.

<sup>2</sup> No normal available.

<sup>3</sup> And on other dates.

During the first five days of the month favorable weather prevailed generally, with the exception of a moderate gale on the 5th, central off the south coast of Newfoundland, and on the same day northerly winds of force 9 were reported from near 55° N., 25° W.

From the 6th to 11th moderate to strong gales prevailed over the greater part of the steamer lanes, and on the 11th there was also a low in the vicinity of Hatteras which was accompanied by winds of hurricane force. On the 12th the center of the low was near Halifax, while southwest gales also occurred off the west coast of Ireland.

From the 13th to 15th the middle and eastern sections of the steamer lanes were again swept by westerly to southwesterly gales. On the 15th a norther of force 7 to 8 was reported near Turks Island.

From the 15th to 17th a disturbance was off the coast of Europe; it reached its greatest extent and intensity on the 16th, when westerly winds of hurricane force prevailed over a region extending as far west as the twenty-fifth meridian.

On the 19th two areas of low pressure over the middle and northeastern sections of the ocean were responsible for heavy weather over a large area. By the 20th the storm area had contracted somewhat and extended from the Azores to the English Channel. On the same date there was a moderate disturbance in the vicinity of Newfoundland.

From the 21st to 26th Europe was visited by the last and most protracted storm of the month. Reports from vessels and land stations indicated westerly winds of force 8 to 12 over a comparatively large area during the greater part of this period.

On the 26th Belle Isle reported wind NNW., force 9, with snow, while on that date and on the 27th moderate gales were encountered in the region between the Bermudas and Newfoundland. On the 27th land stations and vessels in the vicinity of the south coast of England reported southwesterly winds of force 7 to 8.

On the 28th a fairly well developed disturbance of limited extent was central near 40° N., 45° W.; this moved slowly north-northeastward, and on the 29th the center was near 47° N., 40° W., and, as shown in table of gale reports, winds of hurricane force were encountered near the center.